

WHAT IS CLAIMED IS:

1. A multibeam scanning optical device
comprising:

a first optical system which transforms a
5 plurality of light beams emitted from a plurality of
light source means into divergent light beams or
convergent light beams;

a second optical system which focuses a
plurality of light beams emitted from the first
10 optical system as a linear image in a main scanning
direction in the vicinity of a deflection plane of
deflecting means;

the deflecting means which deflects a plurality
of light beams emitted from the second optical system
15 in the main scanning direction; and

a third optical system which focuses the
plurality of light beams deflected by the deflecting
means on a surface to be scanned,

wherein the multibeam scanning optical device
20 further comprises a plurality of adjusting means
having sensitivities different from each other which
change a relative gap in a sub-scanning direction of
principal ray of a plurality of light beams incident
in the second optical system.

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2. A multibeam scanning optical device
according to claim 1, wherein one of the plurality of

adjusting means is automatically controlled by a drive mechanism according to a signal from scanning lines gap detecting means and maintains the predetermined scanning lines gap.

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3. A multibeam scanning optical device according to claim 2, wherein the drive mechanism is fixed during image formation on a page basis.

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4. A multibeam scanning optical device according to claim 1, wherein the first optical system has a plurality of focusing optical elements and has beam synthesizing means which synthesizes a plurality of light beams emitted from the plurality of focusing optical elements into a plurality of light beams proximate to each other.

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5. A multibeam scanning optical device according to claim 4, wherein optical axes of the plurality of focusing optical elements are arranged so as to be parallel or substantially parallel with each other.

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6. A multibeam scanning optical device according to claim 1, wherein the plurality of adjusting means include two adjusting means of a first adjusting means and a second adjusting means.

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7. A multibeam scanning optical device according to claim 6, wherein the plurality of light source means and the first optical system are
5 integrally formed as a unit, and the first adjusting means includes a mechanism for rotating and adjusting the integrated unit with an axis parallel with the optical axes of the plurality of focusing optical elements as a rotation axis.

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8. A multibeam scanning optical device according to claim 6, wherein the plurality of focusing optical elements and the plurality of light source means corresponding thereto are integrated as
15 a unit, respectively, and the first adjusting means includes a mechanism for changing a relative gap among the integrated respective units in the sub-scanning direction.

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9. A multibeam scanning optical device according to claim 6, wherein the second adjusting means is automatically controlled.

10. A multibeam scanning optical device
25 according to claim 9, wherein the second adjusting means includes a mechanism for rotating and adjusting the beam synthesizing means with an axis parallel

with the main scanning direction as a rotation axis.

11. A multibeam scanning optical device
according to claim 9, wherein the second adjusting
5 means includes a mechanism for rotating and adjusting
the beam synthesizing means with an axis parallel
with the optical axes of the focusing optical
elements as a rotation axis.

10 12. A multibeam scanning optical device
according to claim 1, wherein the light source means
comprise multibeam laser light sources having a
plurality of light emission points.

15 13. A multibeam scanning optical device
according to claim 12, wherein the first optical
system includes a plurality of focusing optical
elements, and the plurality of adjusting means
includes a first adjusting means which rotates and
20 adjusts the multibeam laser light sources
corresponding to the focusing optical elements with
optical axes of the focusing optical elements as
rotation axes.

25 14. A multibeam scanning optical device
according to any one of claims 1 to 13, wherein the
deflecting means is constituted by a polygon mirror,

and a width in the main scanning direction of a light beam incident in the polygon mirror is larger than a width of a deflection plane of the polygon mirror.

5 15. An image forming apparatus comprising:
 a multibeam scanning optical device according
to any one of claims 1 to 13;

 a photosensitive member arranged on a surface
to be scanned;

10 a developing device which develops an
electrostatic latent image, which is formed on the
photosensitive member by a light beam used for
scanning by the multibeam scanning optical device, as
a toner image;

15 a transfer device which transfers the developed
toner image onto a material to be transferred; and

 a fixing device which fixes the transferred
toner image on the material to be transferred.

20 16. An image forming apparatus comprising:
 a multibeam scanning optical device according
to any one of claims 1 to 13; and

 a printer controller which converts code data
inputted from an external device into an image signal
25 and inputs the image signal to the scanning optical
system.

 17. A color image forming apparatus comprising

a plurality of image bearing members which are
arranged on a surface to be scanned of a multibeam
scanning optical device according to any one of
claims 1 to 13, respectively, and form images of
5 colors different from each other.

18. A color image forming apparatus according
to claim 17, further comprising a printer controller
which converts color signals inputted from an
10 external device into image data of different colors
and inputs the image data to the respective scanning
optical systems.